Appendix 1
The Chinese Armed Forces: Strength Levels and Organisation in 1988

At a strength of 2,300,000 personnel, PLA ground forces form the largest of the service arms. Implementation of the combined arms concept has resulted in the reorganisation of the 36 Maoist field armies into 22 integrated 'Group Armies'. These are mobile forces, commanding up to four divisions, and represent the Western equivalent of 'corps'. Although reorganisation is complete in administrative terms, only three group armies were reported to be fully equipped in 1988. Eighty infantry divisions, ten armoured divisions, as well as five or six field and anti-aircraft artillery divisions make up the 22 group armies. These are deployed in seven Military Regions (MRs), each of which is comprised of a number of a Military Districts (MDs) that reflect the boundaries of provinces. Figure A.1 and Table A.2 show deployment organisation.

Second largest service is the PLA Air Force. It has a total strength of 470,000 personnel, 220,000 of whom are assigned to air defence, and deploys some 6000 combat aircraft in seven Military Air Regions. Combat organisation is conventional: three squadrons of 12 to 15 aircraft each make up a regiment or 'wing', and three wings constitute the largest operational unit, the division. The Air Force's ground forces consist of four airborne divisions (one in Beijing MR, and three in the central MR of Jinan) as well as sixteen anti-aircraft artillery divisions.

With 300,000 personnel and about 1830 vessels – 53 large surface ships (destroyers and frigates), 115 submarines (three nuclear-powered and the rest mainly modified R- and W-class diesel submarines), and hundreds of minor ships – the PLA Navy is the smallest of China's armed services, but numerically the third largest in the world and the largest among its neighbours in the Asia-Pacific region. Naval deployments span the entire coast from the north, along the eastern coastline and south to the Vietnamese frontier, with base headquarters in Qingdao, Shanghai and Zhanjiang, respectively. The North Sea Fleet, with about 500 vessels (including one submarine flotilla and two squadrons), is deployed from the Yalu River to the south of Lianyungang. From this point to Dongshan, Chinese waters are patrolled by the 750-vessel-strong East Sea Fleet. The East Sea Fleet is equipped with air, air defence and coastal missile units. The South Sea Fleet is responsible for the southern region with its proximity to Vietnam and disputed territories. This fleet comprises about 600 vessels, including two submarine flotillas (25 submarines).
Appendix 2
Chinese Nuclear Forces, 1988

Chinese nuclear forces are small in number but versatile in both reach and basing mode. Offensive nuclear systems, meaning those missiles and aircraft designed to carry nuclear weapons to enemy territory, are the established deterrent. Because China is also developing tactical systems which can be used within the immediate confines of the battlefield, these too are included to provide a more realistic picture of China's current inventory.

Beginning with its strategic systems, China has developed three ranges of ICBM: full, extended and limited. The full-range ICBM is the Dong Feng (East Wind) 5 or DF-5, designated by the US as CSS-4 (CSS = Chinese Surface-to-Surface). It is thought to be capable of delivering a five-megaton payload — presumed to comprise 10 MIRVed warheads1 — to a distance of 12,900 kilometres. Believed to be in the same class as the US Titan II (first deployed in 1963) and the obsolete Soviet SS-9 Scarp, the two-stage DF-5 was successfully tested in 1980. Those now deployed (in hardened silos located in central China) are thought to be powered by solid propellants which, unlike liquid fuel, would permit them to be fired at short notice.

A single DF-5 was used in 1981 to launch, as one payload, three space research satellites, and in 1985 its testing with a multiple warhead nosecone was reported.2 This MIRV capability, whereby the nosecone can release a number of warheads to separate targets, has resulted in the modified DF-5, the newly deployed three-stage CSS-5 or DF-6.3 Given Soviet and American design comparisons, the number of MIRVed warheads it can carry (over a 15,000-kilometre distance) has been estimated at 10 to 12.4 In practical terms, this MIRV capability means, as one commentator expressed it, that China could 'launch nuclear strikes on at least 12 major Soviet cities, including Moscow.'5 Certainly European USSR and continental USA are within range of China's longer-range DF-5 and DF-6 ICBM force. Deployment numbers of this force are not confirmed. Figures range from two to ten missiles.6 One published estimate, derived from a variety of open sources, lists six DF-5s and three DF-6s, bringing the total to nine.7 In 1988, the accuracy of these missiles, each with three warheads, are reported to be deployed.13 Fifty DF-2 (CSS-1) medium-range ballistic missiles (MRBMs) are also single-stage and are designed to deliver a single 20-kiloton warhead to a range of some 1200 kilometres. Comparable to the Soviet SS-4 Sandal design, the DF-2 issues from 1950s Soviet technology. However, the DF-2's continued relevance to contemporary warfare is tested by its sale to the Middle East. In March 1988 it was revealed that China sold an undisclosed number of these missiles (without nuclear warheads) to Saudi Arabia. That they were acquired for the ostensible purpose of deterring attack from Iran, whose inventory includes the Soviet-made SCUD-B and Chinese-made Silkworm missiles, shows that the mid-tech mode of deterrence is still regarded viable. An additional deterrent to possible enemies is the countervalue threat of the missile: DF-2 deployments in Saudi Arabia allow for a target coverage of both Iranian and Israeli population centres.

Another Chinese missile with strong export potential is the new Type M one-stage, solid-fuel missile. At the shorter range of 600 kilometres these ground-based systems will improve the PLA's tactical capabilities. Atomic demolition munitions have long been assumed to exist within the PLA arsenal. Their number remains unspecified, but their use is not difficult to envisage. As Robert Sutter has stated: 'These devices are thought to be ready for use in northern parts of China where they would be employed to destroy mountain passes, divert rivers, and otherwise impede the progress of an advancing enemy force.'14

Turning to sea-based systems, China successfully test-fired a submarine-launched ballistic missile (SLBM) in October 1982 and a cruise missile three years later. The Chinese SLBM, the Julang (Giant Wave) -1 or JL-1 (CSS-NX-4), is a variant of the DF-3. The two-stage, solid-fuelled missile is thought to be capable of delivering a three-warhead MIRV, of 1 to 2 megaton yield, to a maximum range of 3000 kilometres. Broadly in the category of early model Polaris missiles, the JL-1 was publicly displayed by the Chinese at the 1984
National Day military parade. Comparatively, the Chinese SLBM is more compact than the Polaris A1, and of similar size to the Pershing. Twelve of these missiles are carried on one operational Xia-class ballistic-missile nuclear submarine (SSBN). Three more are under construction. Slow progress in the SSBN building programme has led to suggestions that China could be experiencing technical difficulties in this area.\(^{15}\)

As regards aircraft deliverable weapons, some 120 H-6 medium strategic bombers and 250 Q-5 attack aircraft are nuclear capable. The H-6 could deliver free-fall (gravity) bombs up to a 3000-kilometre combat radius if modern air defences could be penetrated, and the Q-5 could carry a nuclear bomb of 5 to 20 kilotons to about 600 kilometres. The 250 to 300 H-5 twin-jet light bombers could also carry nuclear weapons, but at a far more limited radius of action. Although some of the 500 to 600 Q-5s in service perform an air defence role within the Navy, most are thought to be deployed along the northern borders. The H-6 bomber is also deployed in this area in an attack role. Hence range capabilities are maximised, as is their deterrent value, by deployment close to Soviet territory. Nuclear-capable aircraft and MRBMs could supplement short-range missiles and munitions in a defensive war within Chinese territory rather than beyond it.

In terms of the offensive and defensive characteristics of China's nuclear force posture, the Strategic Rocket Units are offensive forces intended to threaten enemy targets. Chinese missile capabilities, as indicated above, range from intercontinental to theatre levels (Figure A.3). Submarine-based missiles, because of their mobile platform, are theoretically capable of threatening targets at either level. Active defence measures against hostile aircraft and missiles are also employed. For its air defence, China relies on an Over-the-Horizon Backscatter (OTH-B) radar system, with a range of 700 to 3500 kilometres and a 60 degree arc of cover; more than 4000 PLA Navy and Air Force fighters; about 100 Hongqi (Red Flag) -2IC or HQ-2IC (SA-2 type) SAMs; and over 16,000 anti-aircraft guns.\(^{16}\) Early warning against ballistic missiles is the function of a phased-array radar complex; while central Asia and the northern border are covered by tracking stations in Xinjiang and Shanxi, respectively. China also has a limited ship-borne anti-ship capability. As a so-called ‘passive defence’ measure, China seeks protection through a civil defence programme incorporating shelter, evacuation, and local defence systems in Beijing and all key cities.\(^{17}\) In sum, China's nuclear posture comprises the three tiers of strategic retaliatory capability, air defence and civil defence.

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**Figure A.3**  
Soviet and Chinese strategic nuclear ranges  